



STATE OF UTAH  
DEPARTMENT OF HEALTH

SCOTT M. MATHESON, GOVERNOR

MICHAEL J STAPLEY, M.P.A., ACTING EXECUTIVE DIRECTOR

February 15, 1985  
533-6146

Alan M. Trbovich  
Engineering/Construction  
1515 Mineral Square  
P.O. Box 11248  
Salt Lake City, Utah 84147

RE: UCD Concentrator  
Modernization Project  
Kennecott Corporation

Dear Mr. Trbovich:

We have reviewed the Project Overview and Water Management Plan for Kennecott's proposed UCD Concentrator Modernization Project. The following information is needed in order to complete our review and be able to issue a construction permit for the proposed sewage treatment process:

1. The design flow rate of 50 gallons per person per day appears to be high. From our past experience, a flow rate of 35 gallons per person per day may be more appropriate, however, if you have data that will substantiate the use of 50 gallons per person per day, then it will be accepted. The flow rate is very important in sizing your wastewater facility and assuring that sufficient organic loading is taking place. Any anticipated employee growth over the next 20-years should also be incorporated into the design.
2. More detailed drawings of the entire extended aeration treatment system are needed for our review. The drawings should include the following:
  - a. Each process unit should be dimensioned so that proper sizing can be determined.
  - b. The hydraulic grade profile of the system needs to be provided.
  - c. All bypass lines should be shown on the plans.
- ✓ 3. What types of waste will enter the janitorial sinks? Will the wastes require pretreatment or can the system handle them without affecting the overall treatment?
- ✓ 4. Laboratory facilities or a contract with a lab is necessary to monitor the plants effluent.
5. A flow measuring device to measure the influent flows into the plant is required.
6. Duplicate unit processes are required so that each unit of the plant can be removed from service independently.

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7. Stand-by power should be provided to those units requiring power.

8. Bar Screen

- a. The approach channel should be shown along with its slope.
- b. The slope of the screen should be between  $30^{\circ}$  and  $45^{\circ}$  with the horizontal and should be shown on the plans along with the screen spacing.

9. Dual Media Filter

- a. The filtration rate needs to be specified.
- b. The media type, effective size, uniformity coefficient, specific gravity and depth need to be specified.
- c. The backwash rate and duration should be given.
- d. The backwash recirculation rate to the headworks should be given.
- e. A backwash water supply storage unit having a minimum capacity of two backwash volumes is required.
- f. Pumps adequate to provide the required rate of backwashing are required.

10. Chlorine Tank

- a. How will chlorine be fed into the wastewater?
- b. What chlorine dosage will be used?
- c. How will sludge accumulation be handled?

- ✓ 11. A more detailed design of sludge handling and disposal is needed for our review.
- 12. Design calculations for sizing of the aeration basin are needed for our review.
- 13. Plan and profile drawings of the sewer feeding the wastewater plant should be submitted for our review.
- 14. Details of the typical manhole, sewer trench and holding tank should be submitted for our review.
- ✓ 15. The location of the groundwater table and any culinary wells relative to the project site should be shown on the plans along with their depths.

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✓ 16. What constitutes process water?

/ 17. What is the storage capacity of the tailings pond?

We recommend that a septic tank-drainfield system be investigated over the extended aeration system. This is due to the ease of operation and the lower cost associated with the septic tank-drainfield system. Soil percolation tests would be required as well as locating the groundwater table, however, the cost savings could be tremendous for both capital and operation and maintenance costs.

We will continue our review once a response to all of the above questions and comments is received. Please feel free to contact me with any questions you may have on our comments or the project in general.

Sincerely,



Bryon O. Elwell  
Public Health Engineer  
Bureau of Water Pollution Control

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cc: Salt Lake City-County Health Department  
Steve McNeal

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